BUL 617

Harvesting and Storing FRESH GARDEN VEGETABLES

• with Notes on Nutrition •

Jo Ann Robbins, Wm. Michael Colt, and Martha Raidl

University of Idaho
College of Agricultural and Life Sciences

Introduction

Vegetables are grown in Idaho at elevations ranging from 1,000 feet to more than 6,000 feet. An accurate general prediction of harvest dates from time of planting is impossible because Idaho's climates differ so greatly. Furthermore, harvest dates differ from season to season, with the type of vegetable, and even with the cultivar (variety) of a certain type of vegetable. Yet, harvesting at the proper stage of maturity is essential for peak flavor and nutrition. Vegetables are still alive after harvest; they are still respiring and breaking down cellular contents to provide energy to live. All successful storage regimes retard the rate of respiration and hence the rate at which the vegetables degenerate.

Harvest vegetables in the morning when they are likely to be at their coolest and will take handling better. Vegetables with waxy, waterproof skins requiring cool storage can be pre-treated in ice water to quickly remove the field heat (heat in the vegetable at harvest). Avoid bruising or otherwise damaging the vegetables to minimize decay during storage. Vegetable quality deteriorates rapidly after harvest. Keep fresh produce out of direct sunlight and cook, process, or place it in the proper storage conditions as soon as possible.

Follow the Vegetable Rainbow

Dietary Guidelines for Americans recommends that individuals eat at least three servings of vegetables a day. One serving is $^1/_2$ cup cooked vegetables or 1 cup raw.

The vegetables you eat should look like a rainbow on your plate. The National Cancer Institute recommends eating blue, red, yellow, orange, purple, and white vegetables. All of the different colors found in vegetables contain different phytochemicals (substances found in plants) that may protect against some diseases.

Blue/purple vegetables contain phytochemicals called *anthocyanins* and *phenolics*. Their health benefits include

- A lower risk of some cancers
- Urinary tract health
- Memory function
- Healthy aging

Green vegetables contain phytochemicals called *lutein* and *indoles*. Their health benefits include

- A lower risk of some cancers
- Vision health
- Strong bones and teeth

White vegetables. Vegetables that fall in this category include white, tan, and brown vegetables that contain phytochemicals called *allicin*, found in the garlic and onion family, and the mineral *selenium*, found in mushrooms. Including these vegetables in your diet helps maintain

- Heart health
- Cholesterol levels that are already healthy
- A lower risk of some cancers

Yellow/orange vegetables contain phytochemicals called *carotenoids* and *bioflavinoids*. Their health benefits include

- A healthy heart
- Vision health
- A healthy immune system
- A lower risk of some cancers

Red vegetables contain phytochemicals called *lycopene* and *anthocyanins*. Their health benefits include

- A healthy heart
- Memory function
- A lower risk of some cancers
- Urinary tract health

Percent Daily Value (% DV) provides an estimate of how individual foods contribute to the total diet. Foods that are an "excellent source" of a particular nutrient provide 20% or more of the daily value. Foods that are a "good source" of a particular nutrient provide between 10 and 19% of the daily value.

The nutrient analyses in this publication come from the USDA Agricultural Research Service Nutrient Data Laboratory, online at http://www.nal.usda.gov/fnic/cgi-bin/nut_search.pl

Colors were provided by "5 A Day," on the web at http://www.5aday.com

Storage Conditions

The best storage conditions depend on characteristics of the vegetable and plant part harvested for use. Ideal storage conditions are described in terms of the temperature and humidity of the storage air. Often the exact conditions won't be available. In those cases, locate the best approximate conditions and improvise to improve them. A refrigerator, basement, cellar or garage, attic, outbuilding, or under-the-house crawlspace are all possible storage locations. Containers and packaging such as plastic bags, mesh bags, boxes, and paper sacks can modify storage conditions. Some vegetables can be packed in damp or dry sand, soil, or sawdust to improve storage conditions. If you'd like to build your own storage unit, your local extension educator can provide plans for low-cost structures.

Some vegetables cannot be stored with other vegetables because they will flavor them. For example, onions and garlic can be stored together but not in close proximity to other vegetables. Cross-transfer of odors can be avoided by NOT storing carrots with onions or cabbage or potatoes with other root crops.

Methods of Storage

Method 1: Cold, moist storage—32-40°F, 90-95% relative humidity. The colder part of a refrigerator generally provides this range of temperatures. To maintain a high relative humidity, place vegetables in plastic bags or place them unbagged in the crisper, which should be half or more full. With all moist storage methods, if vegetables need to be washed, drain them before storing them. Remove excess water or allow it to evaporate.

Method 2: Cool, moist storage—45-50°F, 80-90% relative humidity. A special refrigerator kept at these warmer temperatures may be warranted for storing large amounts of vegetables. Vegetables needing this type of storage are sensitive to chilling injury at temperatures below 45° F. Storing certain immature vegetables under these conditions will allow ripening that would not occur at a lower temperature. Vegetables should be in plastic bags or in the crisper (as in method 1) to maintain the humidity of the surrounding air.

Method 3: Cool, dry storage—35-55°F, 50-60% relative humidity. Use cool rooms and buildings. Pack vegetables in something other than plastic to maintain reduced humidity levels, such as in mesh or brown paper bags or in cardboard boxes. If you wash the vegetables before storing them, dry them thoroughly before placing them in storage. A little dry dirt is not a storage problem, however; and you can clean the produce just before use.

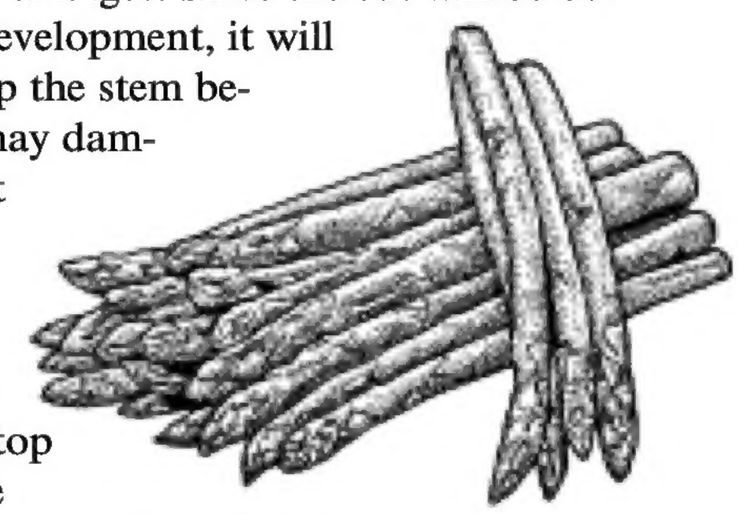
Method 4: Warm, moist storage—55-60°F, 80-85% relative humidity. Basement areas, garages, and semi-heated outbuildings, combined with plastic bags or damp soil, sand, or sawdust, often satisfy these conditions.

Method 5: Warm, dry storage—55-60°F, 60-70% relative humidity. Store in basement areas, garages, and semi-heated outbuildings in packaging other than plastic to maintain reduced humidity levels, such as in mesh or brown paper bags or in cardboard boxes.

Asparagus

Wait until the third year after planting crowns to harvest asparagus. For the first harvest, limit your picking to no longer than 1 month. The plants are still expanding their root and storage systems, and excessive removal of spears will weaken the plants. In following years, extend the harvest but stop when spears become less than 1/2 inch in diameter.

Harvest spears 5 to 8 inches in length by cutting or snapping them off. To cut a spear, run a knife under the ground where the spear emerges. Since the cut will be below the point of fiber development, it will still be necessary to snap the stem before cooking. Cutting may damage some spear tips that have not emerged. That is why many horticulturists recommend snapping. To snap a spear, bend it from the top toward the ground. The spear will break at the point where it is free of fiber. Spear diameter is not related to tenderness. Asparagus spears are good fresh, frozen, or canned.



Use Storage Method 1. Packing the stem ends in moist toweling or resting the ends in a little water will restore or maintain freshness. Asparagus is still growing when harvested, so spears must be placed in an upright position to keep them from growing crooked. Average storage life is 1 to 3 weeks.

> Nutrition note: 1/2 cup cooked asparagus contains 22 calories and 1.4 grams of fiber. Asparagus is an excellent source of folate (33% DV) and a good source of vitamins C (16% DV) and A (10% DV). Color = green, purple.

Beans: Fava (or broad)

Pick fava beans immature, when the pods are only 6 to 8 inches long. This is when the beans are sweetest and most tender. Shell the beans before cooking them.

To dry the beans for later use, spread mature pods in a warm, dry place until the pods and the beans are completely dry. Then hull the beans and store beans in insect-proof containers.

Use Storage Method 1 for fresh beans. Beans will store 5 to 7 days.

Use Storage Method 3 for dried beans. To protect against seed insects, place dried beans in the freezer at 0° F (or below) for 3 to 4 days before storage. Dried beans will keep well for 1 year.

Nutrition note: Dry beans fall into the meat class of food groups; 1/2 cup cooked fava beans are substantially higher in protein (6.5 grams) than the same amount of fresh beans (1 gram of protein) or other vegetables (1-2 grams of protein). 1/2 cup cooked fava beans also contains 94 calories and 5 grams of fiber and is an excellent source of folate (22% DV). Color = no category, as fava beans are considered a legume rather than a vegetable.

Beans: Lima

Lima beans are grown for their seeds. Pods are tough and fibrous. Lima beans are of best quality when young. They become mealy and tough-skinned if they remain on the plant. Harvest when the pods are plump and firm and before they turn yellow. The end of the pod should be spongy. The pods of different cultivars will differ in external appearance as the beans are developing. Test-pick a few pods to be sure that the beans are at a desirable stage of maturity. Remove pods regularly to keep plants flowering and fruiting. Shelling lima beans immediately after harvest is easiest, before the pods wilt.

Toward the end of the gardening season, the last of your crop can be allowed to remain on the plant until dry for use as dry beans.

Use Storage Method 1 for fresh beans. Beans will store for 5 to 7 days.

Use Storage Method 3 for dried beans. To protect against seed insects, place dried beans in the freezer at 0°F, or below, for 3 to 4 days before storage. Dried beans keep well for 1 year.

Nutrition note: 1/2 cup cooked lima beans contains 108 calories, 7 grams of protein, and 7 grams of fiber and is a good source of iron (12% DV) and thiamin (10% DV) and an excellent source of folate (20% DV). Color = no category, as lima beans are considered a legume rather than a vegetable.

Beans: Snap (green, yellow, and purple)

Pick when pods are fleshy with pliable tips and seeds are small, immature, and do not cause pods to bulge. At harvest, beans should break easily with a "snap" when bent. Be careful not to break the stems or branches of the plant as you pick. Harvest the pods often, as the plants will continue to form new flowers and produce more beans if all the pods are removed before the seeds mature.

Use Storage Method 2. Average storage life is 7 to 10 days.

Nutrition note: 1/2 cup cooked green beans contains 22 calories and 2 grams of fiber and is a good source of vitamin C (10% DV). Color = green, yellow, purple.

Beets

Beets may be harvested over a lengthy period. Begin to harvest the greens when leaves are 4 to 6 inches long. Greens with roots attached are best when harvested before the roots grow to be 1 inch in diameter, but they can be harvested at any stage of growth. Beet greens are delicious when fresh and can be used raw in salads and frozen or canned.

Harvest beet roots when they grow to 1 1/2 to 3 inches in diameter, depending on the cultivar. Larger beets can be used, especially for pickling. Beets become tough and stringy in dry, hot weather so harvest them at an earlier stage of maturity. Late summer plantings can be harvested long into the fall.

Use Storage Method 1 for greens or greens with the roots attached. Bunched beets will keep 10 to 14 days.

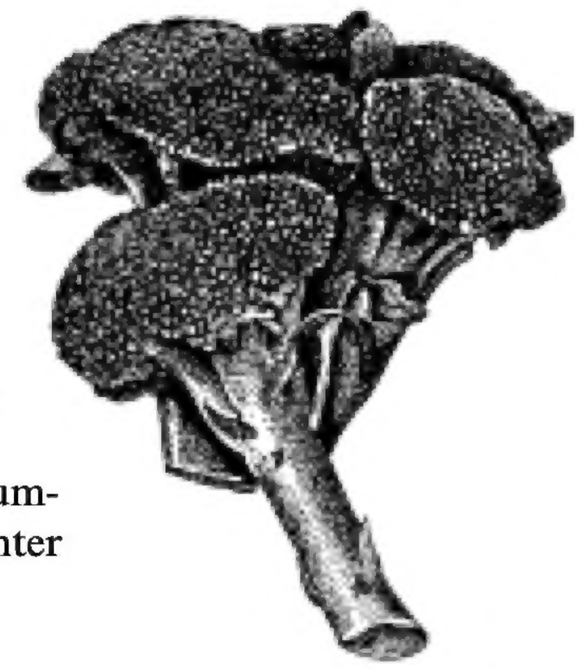
Use Storage Method 1 for beet roots. Wash and refrigerate immediately. Beets will keep for 3 to 5 months.

Nutrition note: 1/2 cup of cooked beet greens contains 19 calories and 2 grams of fiber and is an excellent source of vitamins A (24% DV) and C (30% DV). Color = Green.

1/2 cup cooked beet roots contains 110 calories, 1.5 grams of fiber, and small amounts of iron (8% DV), vitamin C (6% DV), and folate (6% DV). Color = red, yellow.

Broccoli

The edible parts of broccoli are the compact clusters of unopened flower buds and the attached stem. Young tender leaves are also edible. The green buds develop a central head and possibly several smaller side shoots. Cut the central head with 5 to 6 inches of stem. The head should be firm to hand pressure, compact, and all the buds should be closed. When yellow flower petals appear, the prime harvest period has passed.



Removing the central head generally stimulates the side shoots in the axils of the lower leaves to develop for later pickings. Continue to harvest broccoli for several weeks. Broccoli develops best in cooler temperatures, so it can be planted in spring for summer harvest and in fall for winter harvest.

Use Storage Method 1. Broccoli will store for 10 to 14 days.

Nutrition note: 1/2 cup cooked broccoli contains 22 calories and 2 grams of fiber and is an excellent source of vitamins C (97% DV) and A (22% DV) and a good source of folate (10% DV). Color = green.

Brussels Sprouts

The small sprouts or buds of Brussels sprouts form heads 1 to 2 inches in diameter. They may be picked (or cut) off the stem when they are firm and about 1 inch in diameter before the outer leaves on the heads split. The lower sprouts mature first. Remove lowermost leaves as you harvest. Harvest sprouts before the leaves turn yellow. To maximize fall harvests, break the growing tip of the plant in mid August to force the remaining sprouts to mature.

Brussels sprouts are hardy to 0°F and their flavor is improved by frost. They can be left in the garden for winter use. Alternatively, cut or pull plants and store them in cold, moist conditions (storage method 1), cutting off the sprouts as needed.

Use Storage Method 1. Average storage life is 3 to 5 weeks.

Nutrition note: 1/2 cup of cooked Brussels sprouts contains 30 calories and 2 grams of fiber and is an excellent source of vitamin C (80% DV) and a good source of folate (12% DV) and vitamin A (11% DV). Color = green.

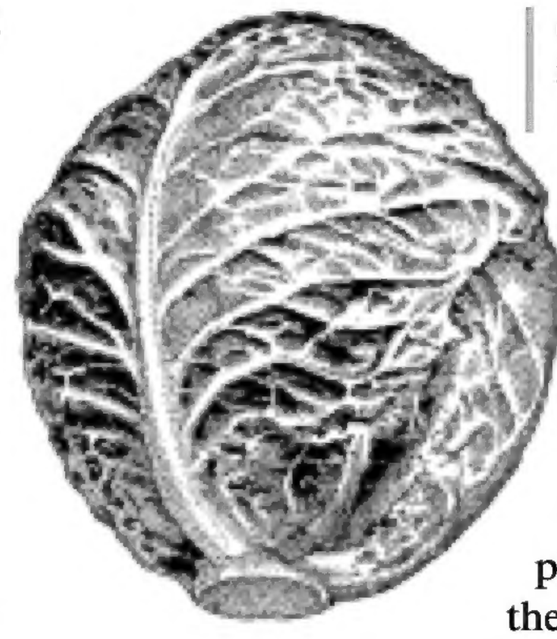
Cabbage

Cut cabbages when the heads are compact and before they split open. Heads should be heavy for their size. Mature cabbage heads will keep longer in the garden if their roots are either cut with a shovel or broken by twisting the plant.

A crop of small heads (cabbage sprouts) will form at the base of the leaves remaining after the harvest of spring-planted cabbage. Encourage them by cutting the stem as close to the head as possible, leaving the leaves at the base of the stem intact. When sprouts are firm and 2 to 4 inches in diameter, they are ready to harvest. Plant cabbage in late summer for fall harvest.

Use Storage Method 1. Some types of cabbage store longer than others. Be sure to match your needs with the correct type. Early type cabbages store for 3 to 6 weeks, while late types will keep 3 to 4 months.

Nutrition note: 1 cup of raw chopped cabbage contains 22 calories and 2 grams of fiber and is an excellent source of vitamin C (48% DV). Color = green, red.



Carrots

Carrots can be used anytime they are 1/2 inch or more in diameter. Carrots will reach a minimum diameter of 3/4 to 1 inch about 60 to 70 days after planting. At that time, harvest them over a 3- to 4-week period. Very large carrots may be woody or tough and have lower sugar contents. Finish harvest before the ground freezes.

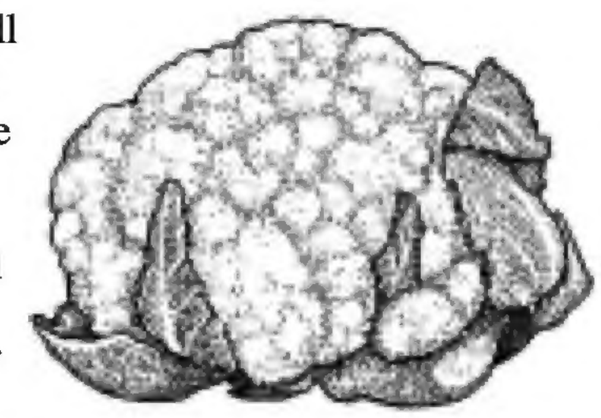
Use Storage Method 1. Remove tops before storage. Carrots will keep 4 to 6 months.

Nutrition note: 1/2 cup cooked carrots contains 35 calories and 2.5 grams of fiber. Carrots are an excellent source of vitamin A (383% DV). Color = yellow/orange, purple.

Cauliflower

Cauliflower heads develop rapidly under proper growing conditions. Tie the inner leaves over the young heads when they are 2 to 3 inches in diameter to shade them from the sun and keep them a bright, white color. Heads will ultimately grow to 6 to 8 inches in diameter. However, harvest can begin 3 to 4 days after tying the leaves or when the head is white and compact. The head is overmature when it is soft or when the plant leaves are yellow. Harvest heads by cutting.

Use Storage Method 1. Chill cauliflower immediately after harvest. Cauliflower will store 2 to 4 weeks.



Nutrition note: 1/2 cup cooked cauliflower contains 14 calories and 1.7 grams of fiber and is an excellent source of vitamin C (46% DV). Color = white.

Corn: Sweet

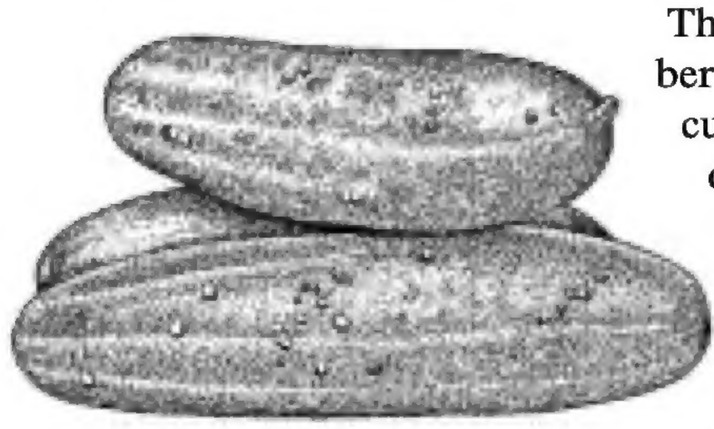
Pick sweet corn ears when the kernels are not fully mature. Sweet corn is ready to pick when the juice from a kernel punctured with a fingernail appears opaque rather than clear. It should not be thick or doughy. Kernels reach this stage about 20 days after the appearance of the first silk strands and the stage lasts a week or less, depending on the cultivar. At harvest, the kernels should be smooth and plump even near the tip of the ear. The husk on the ear will be tight and green and the pollination silks will be dry. Check ears frequently so as not to miss the perfect harvest stage. To harvest, snap off the ears by

hand with a quick, firm, downward push, twist, and pull.

Use Storage Method 1. The ears should be eaten, processed, or chilled as soon as possible after harvesting. The sugars in the kernels start turning to starch soon after picking and the corn loses its sweet taste. The newer sugary enhanced and super sweet cultivars of corn will keep their sweetness longer after harvest under proper storage conditions. Average storage time is 2 to 10 days.

Nutrition note: 1/2 cup cooked corn contains 89 calories and 2.3 grams fiber. It is a good source of thiamin (12% DV). Color = yellow.

Cucumbers



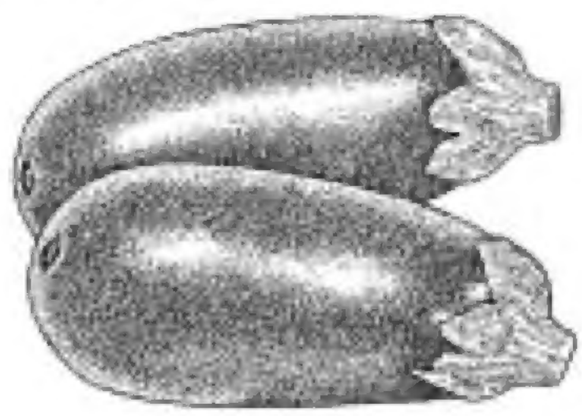
The picking size of cucumbers varies according to the cucumber type and the desired use, but cucumbers should always be picked before the seeds fully enlarge and harden. They may be picked when they are 2 inches long or shorter for tiny pickles, 4 to 6 inches long for larger pickles or pickle slices, and up to 6 to 8 inches long for some of the slicing cultivars. A cucumber is of highest quality when the fruit is firm, bright, and green in color with no dullness or yellowing to the skin. Mature fruit left on the plants will stop cucumber production. Since cucumber fruits grow rapidly, pick daily or every other day.

Use Storage Method 2. Slicing type cucumbers pickle poorly so be sure the cucumber type matches your use. Cucumbers will keep 10 to 14 days.

Nutrition note: Cucumbers have a high water content (95% water) and therefore are low in calories. 1/2 cup peeled, raw cucumber contains 15 calories, 0.4 grams of fiber, and small amounts of vitamin C (5.5% DV) and folate (4% DV). Color = green.

Eggplant

Harvest eggplant before the seeds enlarge, harden, and turn brown. The fruit should be firm, yet give slightly and recover when pressed with your thumb. The exterior should be glossy. Small fruits are best quality, but consider the potential size typical of the cultivar when picking. Some types are egg sized at maturity, while others may develop up to 8 inches long. Keep mature fruits picked, and plants will produce dozens of fruit over the entire season.



Use Storage Method 2. Eggplant will store up to 1 week.

Nutrition note: 1/2 cup cooked eggplant contains 14 calories, 1.2 grams of fiber, and small amounts of folate (2% DV), vitamin C (1% DV), and iron (1% DV). Color = purple.

Endive and Escarole

Harvest when the plant is fully developed (10 to 12 inches across) and the center leaves have been blanched for 2 to 3 weeks by covering them or tying them loosely to exclude light. Generally, only the pale, center leaves are eaten.

Use Storage Method 1. Escarole can also be lifted from the ground, transplanted into damp soil, stored in the dark, and harvested as needed for 1 to 3 months. Endive will store for 2 to 3 weeks after harvest.

Nutrition note: 1 cup of chopped, raw, escarole contains 8 calories and 2 grams of fiber and is a good source of folate (18% DV). Color = green.

1 cup of chopped, raw endive contains 9 calories and 1.6 grams of fiber and is an excellent source of vitamin A (20% DV). Color = green, purple.

Garlic

When garlic bulbs are mature, the tops yellow and begin to dry. Dig bulbs when the tops are about one-half brown and one-half green. Dry bulbs in the garden for several days with their tops attached and out of the direct sun. After drying, clean off the loose dirt and trim the roots close to the bulb. Braid the tops of types with pliable leaves. Alternatively, remove the tops to 1 to 1 1/2 inches above the bulb.

Use Storage Method 3. Keeping garlic in warm, dry conditions for 3 to 6 weeks will cure it. This drying treatment will prolong storage life. Garlic will keep for 6 to 7 months.

Nutrition note: 1 serving of garlic is 1 garlic clove, which contains 5 calories. Garlic contains no fat, sodium, or cholesterol. Some studies show that it may lower blood pressure and cholesterol levels. Color = white.

Greens: Beet

See beets.

Greens: Collards

Collard plants resemble cabbage plants. If they look big enough to "head" (if they were cabbages), they are ready to harvest. All green parts of the plant are edible

and may be harvested any time during the season. Plants can be cut at ground level when they are 6 to 10 inches high. Alternately, pick the larger leaves when the plants are 10 to 12 inches high, leaving the younger leaves for later use.

Use Storage Method 1. Collard greens will store 10 to 14 days.

Nutrition note: 1 cup of chopped, raw collards contains 11 calories and 1.3 grams of fiber and is an excellent source of vitamins A (28% DV) and C (21% DV) and a good source of folate (15% DV). Color = green.

Greens: Kale

The lower outer leaves may be individually picked when kale is small (6 to 8 inches long) and tender. New leaves will then grow. Alternatively, the entire plant may be cut at any time. Frost improves the flavor, and the plant will withstand night freezes. Late summer plantings usually give best results. Kale can be harvested until early winter when severe freezes injure or kill the plants.

Use Storage Method 1. Harvested kale will keep 10 to 14 days.

Nutrition note: 1 cup of chopped, raw kale contains 34 calories and 1.3 grams of fiber and is an excellent source of vitamins C (134% DV) and A (119% DV). Color = green.

Greens: Mustard

Harvest outer leaves of mustard when they are 6 to 8 inches long. New leaves will provide a continuous harvest until the flavor becomes strong and the leaves become tough from hot weather. Seed mustard again in late summer for a fall crop.

Use Storage Method 1. Wash and chill mustard greens immediately. Mustard greens can be stored for 10 to 14 days.

Nutrition note: 1 cup of raw mustard greens contains 15 calories and 2 grams of fiber and is an excellent source of folate (26% DV), vitamin C (65% DV), and vitamin A (59% DV). Color = green.

Greens: New Zealand Spinach

Pick only young leaves or tips of older ones. Harvest when the leaves reach 8 to 10 inches in length. Cut or snap off branches 3 to 4 inches from the tips. Harvesting can continue throughout the growing season as new branches form. New Zealand spinach will not form a seed stalk in response to the warm days of summer, so can be harvested throughout the season

Use Storage Method 1. New Zealand spinach will store for 10 to 14 days.

Nutrition note: 1 cup of chopped, raw New Zealand spinach contains 8 calories and is an excellent source of vitamins C (28% DV) and A (49% DV). Color = green.

Greens: Spinach

Spinach leaves can be harvested when they are quite small. Cutting leaves off without damaging the growing point of the plant will provide a continuous harvest, as new leaves will continue to form and grow. Avoid eating older and yellowing leaves. Seed stalk development begins with warmer days in early summer. Harvest all spinach before this time, as quality deteriorates rapidly after this stage of growth. Planting another crop in early fall will provide spinach until frost kills the plants.

Use Storage Method 1. Wash spinach well and store it immediately. Spinach will store 10 to 14 days.

Nutrition note: 1 cup of raw shredded spinach contains 40 calories and 5 grams of fiber and is an excellent source of vitamin C (25% DV), iron (20% DV), and vitamin A (70% DV). Color = green.

Greens: Swiss Chard

Swiss chard is related to garden beets. It does not produce a usable root and is grown for its leaves and stems, which can be harvested all season. Harvest chard by cutting individual outer leaves close to the ground. Even large leaves are good, but the younger leaves 6 to 8 inches tall have a milder flavor. If you do not damage the terminal bud of the plant, located near the ground and in the center of the plant, the plant will continue to produce until it freezes in the fall.

Use Storage Method 2. Chard will keep for 7 to 10 days.

Nutrition note: 1 cup raw Swiss chard contains 7 calories and 0.6 grams of fiber. Chard is an excellent source of vitamin A (24% DV) and a good source of vitamin C (18% DV). Color = green.

Greens: Turnip

See turnips.

Jerusalem Artichoke

Dig the tubers as needed anytime the plant is not actively growing in the fall or spring. A supply can be harvested for winter use before the soil freezes.

Use Storage Method 1. Jerusalem artichokes will store for 2 to 5 months.

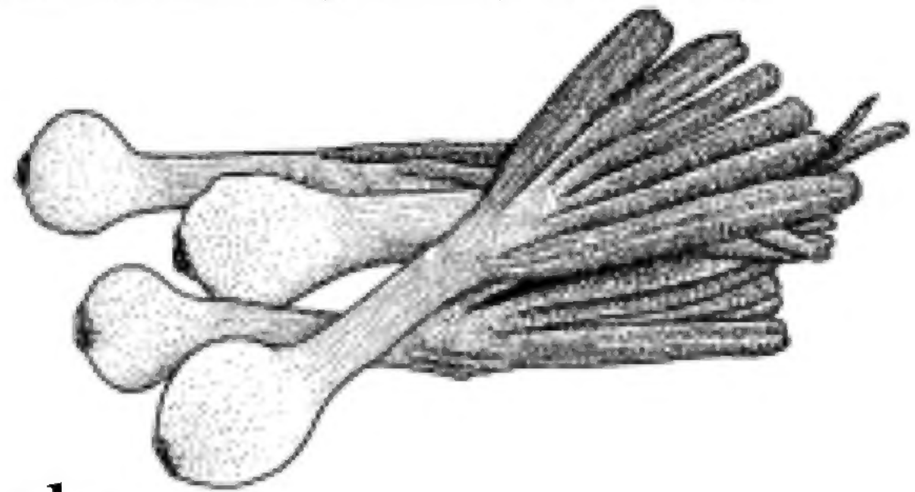
Nutrition note: 1 cup raw, sliced Jerusalem artichoke contains 114 calories and 2.4 grams of fiber. The Jerusalem artichoke is an excellent source of iron (28% DV) and of thiamin (20% DV) and a good source of vitamin C (10% DV). Color = white.

Kohlrabi

Harvest when the stem is 2 to 3 inches in diameter. Large, older kohlrabi is tough and woody and will have an off flavor. Harvest by pulling the plant. Cut the root off at the base of the swollen stem and remove the leaves. Very young leaves are edible.

Use Storage Method 1. Kohlrabi will store 2 to 4 weeks.

Nutrition note: 1 cup raw, sliced kohlrabi contains 36 calories and 5 grams of fiber. Kohlrabi is an excellent source of vitamin C (140% DV). Color = white.



Leeks

Begin harvesting leeks when the base reaches about 1/2 inch in diameter. Leeks will withstand some freezing weather, allowing for a long harvest season.

Use Storage Method 1. Leeks will store well for 1 to 3 months.

Nutrition note: 1/2 cup cooked leeks contains 16 calories, 0.5 grams of fiber, and small amounts of iron (3.2% DV) and vitamin C (3.6% DV). Color = green.

Lettuce

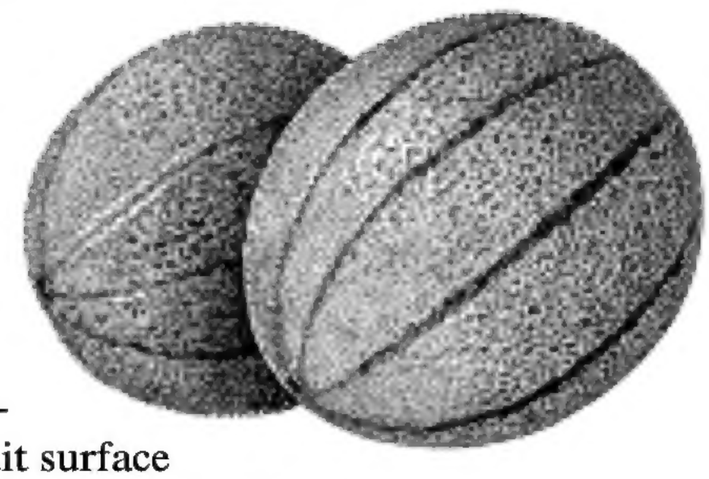
Harvest lettuce before a seed stalk starts to develop. Lettuce becomes bitter after the seed stalk forms and in hot weather. Usually, the seed stalk can be felt in the plant center before it begins to show. Harvest the entire plant or individual leaves. Leaves will regrow on plants with an undamaged growing tip, found at the center of the plant.

Harvest leaf lettuce at any stage. Harvest head lettuce after it has formed a tight, compact head. All lettuce tastes better when grown and harvested in the cool weather of spring or fall. Replant for a fall crop.

Use Storage Method 1. Lettuce will keep for 2 to 3 weeks.

Nutrition note: 1 cup raw, shredded lettuce contains 7 calories, less than 1 gram of fiber, and small amounts of vitamins C (4% DV) and A (4% DV). Color = green.

Melon: Cantaloupe (muskmelon)

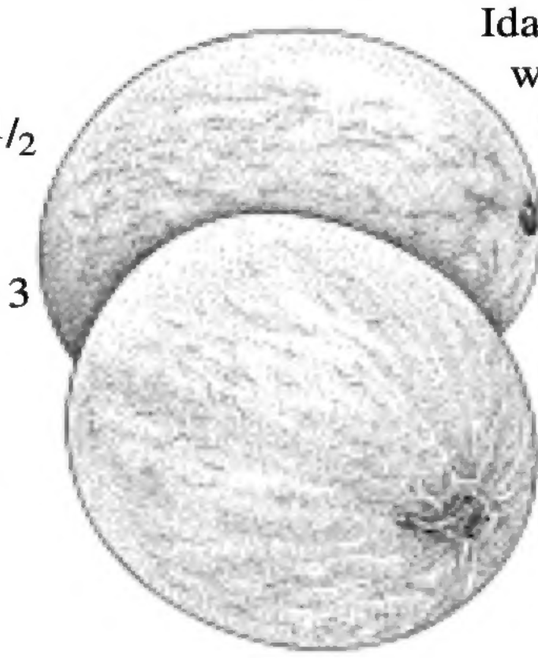


Cantaloupes, also known as muskmelons, usually change to a golden or yellow color as they ripen. When the stem slips from the melon with light pressure, it is ready for harvest. The netting on the fruit surface will be raised and well formed. Usually the skin between the netting turns from green to tan. Cantaloupes also develop a stronger aroma when they are ready to harvest.

Use Storage Method 1. Fully ripe cantaloupe will store 5 to 14 days. When cantaloupe is not fully ripe, use storage method 2.

Nutrition note: 1 cup diced cantaloupe contains 55 calories and 1.25 grams of fiber and is an excellent source of vitamins C (110% DV) and A (100% DV). Color = yellow/orange.

Melon: Crenshaw and Honeydew



Crenshaw and honeydew melons with short times to maturity are worth trying to grow in Idaho. Most can be grown in the warmer areas of the state below 2,500 feet elevation. The entire melon, including the portion resting on the ground, will change to the color characteristic of the variety (green, yellow, orange, or gold) when ripe. These melons also have a sweet aroma when they are ready to use, but the stems do not slip as they do on cantaloupe, and the melons must be cut from the plant.

Use Storage Method 2. Crenshaw will store for 2 weeks, honeydew for 3 to 4 weeks.

Nutrition note: 1 cup diced honeydew contains 248 calories and 1 gram of fiber and is an excellent source of vitamin C (70% DV). It has small amounts of vitamin A (1.4% DV), calcium (1% DV), and iron (less than 1% DV). Color = green.

Melon: Watermelon

It takes experience to know when to harvest watermelons. They should be fully mature, as the fruits do not develop internal color and sugar off the vine. Look for these signs of ripeness: (1) the light-green, curly tendrils on the stem near the point of attachment of the melon turn brown and dry, (2) the surface color of the fruit

turns from smooth and glossy to rough and dull, (3) the skin becomes resistant to penetration by the thumbnail, and (4) the bottom of the melon (where it lies on the soil) turns from a light green to yellowish. These indicators are more reliable than "thumping" the melon with a knuckle. Many watermelons do not emit the proverbial "dull thud" when ripe. Watermelon will hold good ripe quality on the vine for 7 to 10 days.

Use Storage Method 2. Watermelon will store 2 to 3 weeks.

Nutrition note: Watermelons are composed of 90% water and are low in calories. A 1-cup serving provides approximately 50 calories and less than 1 gram of fiber. Watermelons are an excellent source of vitamin C (24% DV) and a good source of vitamin A (11% DV). They contain small amounts of calcium (1.2% DV) and iron (1.4% DV). Color = red, yellow.

Okra

Okra has the best quality when pods are immature and 2 to 3 inches long. The pod should be bright green with small seeds. Pick 3 to 7 days after the flower wilts. Getting top quality may require daily harvesting. Overmature pods are woody, hollow, and pithy. To keep the plants producing, remove all overmature pods.

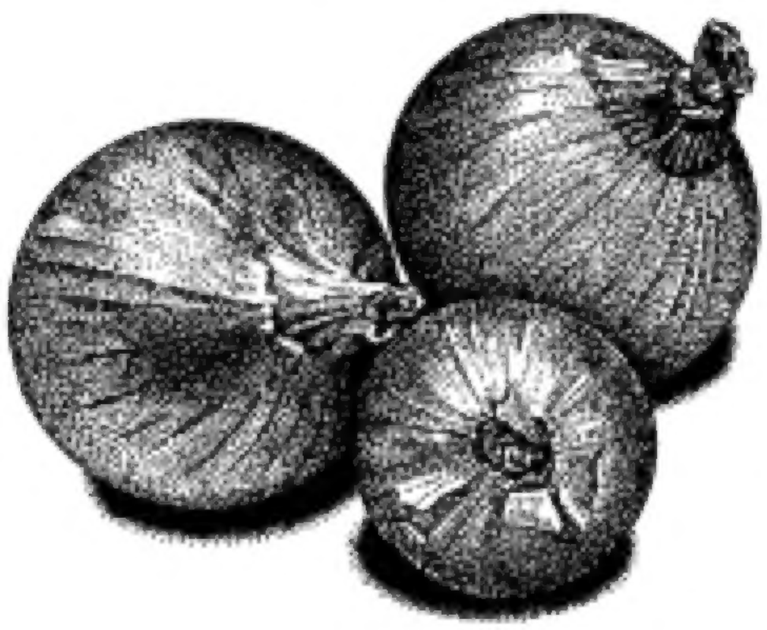
Use Storage Method 2. Chill immediately. Okra will keep for 7 to 10 days.

Nutrition note: 1/2 cup cooked okra contains 26 calories and 2 grams of fiber, is an excellent source of vitamin C (22% DV), and contains small amounts of vitamin A (9% DV), calcium (5% DV), and iron (2% DV). Color = green.

Onions

Onions for fresh use can be harvested anytime during their growth. Onions for dry storage should be left in the ground until 20 to 50% of the tops have fallen over.

Use Storage Method 3. Dig the onions and lay them, tops attached, out of direct sunlight (to prevent sunburn) to dry and cure for 3 to 7 days at 60 to 80°F and 40 to 50% relative humidity. Before storing, cut or remove dried tops 1 to 3 inches above the onion, remove any loose dirt, and trim the roots. Do not remove any of the protective, dry skin from the onion. Cured onions will store for 1 to 8 months.



Nutrition note: 1/2 cup cooked onion contains 46 calories, 1.5 grams of fiber, and small amounts of vitamin C (9% DV), calcium (2% DV), and iron (1% DV). Color = white, green, red.

Parsley

Harvest when outer leaves with stalks are 3 to 4 inches long. Harvest throughout the summer until heavy frosts damage the plants. Parsley will flower, fruit, and die in its second season. Replant yearly from seed.

Use Storage Method 1. Parsley will keep 1 to 2 months.

Nutrition note: Parsley is usually not eaten in a large enough quantity to affect nutrition to any extent. One tablespoon of raw parsley contains 1.4 calories, 0.1 gram of fiber, 8% DV of vitamin C, and 4% DV of vitamin A. Color = green.

Parsnips

Leave parsnips in the ground until their tops freeze in late fall, as their flavor becomes sweeter when the roots are exposed to temperatures below 40°F. Unharvested roots can be left in the garden to be used during the winter. Small to medium width roots have the best texture and flavor. Large roots and overwintered roots forming seed stalks become woody.

Use Storage Method 1. Parsnips will keep 2 to 6 months.

Nutrition note: 1/2 cup of cooked parsnips contains 63 calories and 3 grams of fiber and is a good source of vitamin C (17% DV) and folate (11% DV). It contains small amounts of calcium (3% DV) and iron (2.5% DV). Color = white/tan/brown.

Peas

Harvest shelling peas when the pea pods are round, plump, and firm and the peas are not too large and still sweet and tender. Shell peas immediately or just prior to use.

Pick edible-pod sugar or snow peas as soon as the seeds are barely perceptible in the pod. These peas have flat pods that are eaten before the pea seeds mature. Large, more mature pods are tough and stringy, and they will not be tender when cooked.

Edible snap pea pods are rounded and the seeds par-

tially to fully fill the pod at the correct harvest stage. For the sweetest flavor, seeds should be about one-half of their largest potential size.

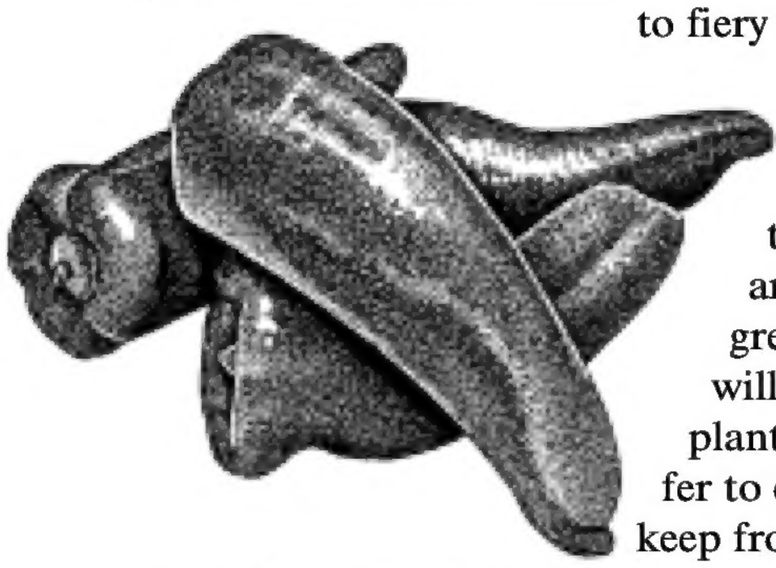
Eat or process all types of peas quickly, as their quality deteriorates rapidly.

Use Storage Method 1. Wash and chill immediately after harvest. Peas will keep 1 to 3 weeks.

> Nutrition note: 1/2 cup of cooked peas contains 67 calories and 4.4 grams of fiber and is a good source of vitamin C (19% DV), thiamin (15% DV), folate (13% DV), and vitamin A (10% DV). It also contains smaller amounts of niacin (8% DV), riboflavin (7% DV), iron (7% DV), and calcium (2% DV). Color = green.

Peppers

The fruits of pepper plants come in many shapes (elongated to round), sizes (petite to large), colors (yellow, green, red to almost black), and flavors (sweet and mild to fiery hot).



The bell types are usually picked when they reach full size—3 to 4 inches long—and are glossy, firm, and green. At this stage, they will break easily from the plant. Some gardeners prefer to cut off the fruits to keep from damaging the plant. Peppers may be left on the plant to ripen to their mature color, usually red, orange, or yellow. At that stage, flavors are more developed.

Hot peppers (chilies or chili peppers) are harvested and dried after they turn red. Jalapeno peppers, however, traditionally are used green.

Harvest peppers or whole plants in the fall before frost. Peppers will continue to color in storage as long as they are full sized at harvest.

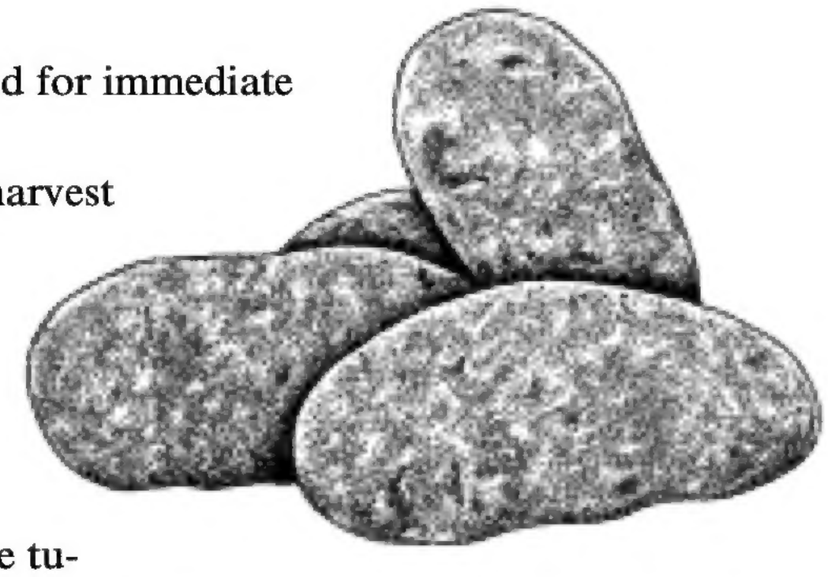
Use Storage Method 2 for fresh peppers. Fresh peppers will store 8 to 10 days.

Use Storage Method 3 for dried peppers. Dried peppers will store for 6 months to a year.

> Nutrition note: One large uncooked green pepper contains 20 calories and 0 grams of fiber. It is an excellent source of vitamins C (170% DV) and A (80% DV). Hot peppers are usually not eaten in great enough quantities to contribute to nutrition, but they are high in vitamins C and A. Colors depend on the type of pepper: green, yellow/orange, red, purple.

Potatoes: Irish

Harvest potatoes whenever they are large enough to eat. Very small potatoes are often called "new" potatoes. Immature potatoes continue developing in soil, so dig only what you need for immediate use.



Make the final harvest before the first heavy freeze, after the tops have died naturally.

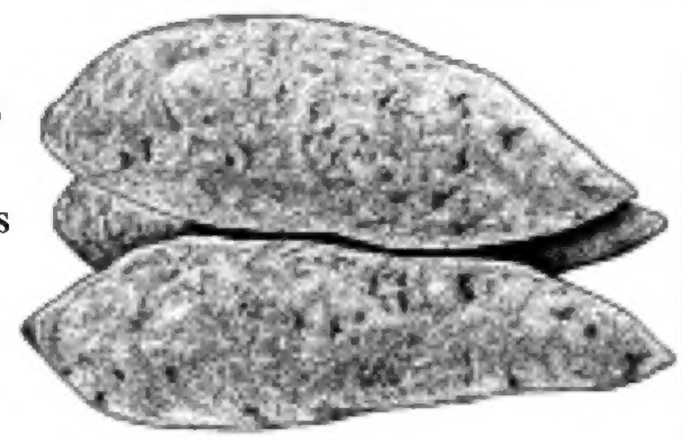
Use Storage Method 2. To allow the skin on the tuber to cure, dig potatoes 1 to 2 weeks after the tops have died. Alternatively, dig potatoes immediately after the tops die and hold them for 1 to 2 weeks at 60 to 75°F and 80 to 90% relative humidity. This latter treatment also allows wounds to heal. Remove dirt but do not wash potatoes before storing them. Minimize their exposure to light as light turns the tubers green and stimulates the production of dangerous alkaloids. Potatoes will keep well for 2 to 9 months, depending on the cultivar and storage conditions.

> Nutrition note: Potatoes have been unfairly thought of as a high-calorie food. Actually, it is the preparation with butter, sour cream, or cooking fat that is high in calories. In fact, one medium potato contains only 160 calories and provides 4 grams of fiber. It is an excellent source of vitamin C (28% DV) and a good source of iron (10% DV) and niacin (12% DV). Color = white, yellow, red, purple.

Sweet Potatoes

Northern types of sweet potatoes will mature in Idaho. Dig roots in late September or early October. Handle roots carefully and do not bruise them or scrape the skin.

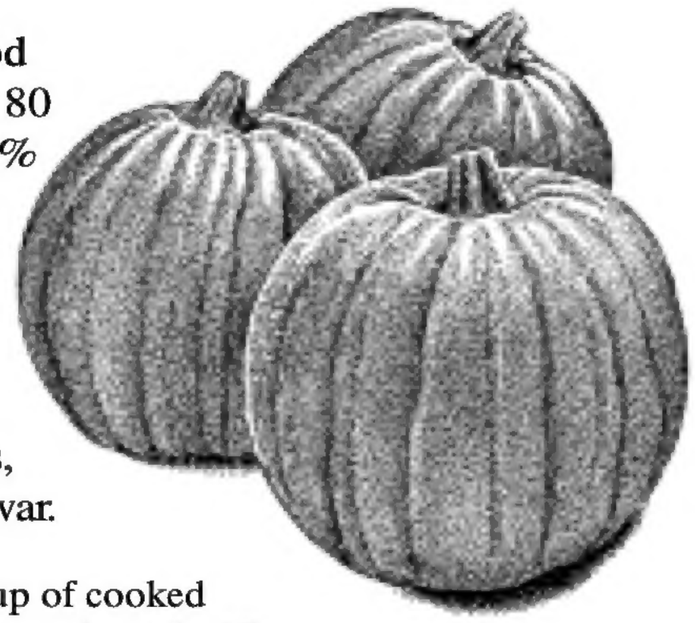
Use Storage Method 4. Remove dirt but do not wash sweet potatoes. Cure by keeping the roots at 80 to 95°F in 95% relative humidity for 10 days to 2 weeks. Then transfer to cooler, less-humid conditions for long-term storage. Sweet potatoes will store 4 to 6 months.



> Nutrition note: One medium baked sweet potato contains 171 calories and 3.4 grams of fiber. It is an excellent source of vitamins A (498% DV) and C (47% DV). Color = yellow/orange.

Pumpkins

Allow pumpkins to ripen fully on the vine. A pumpkin ready to harvest will have a hard rind and mature seeds. The stem will turn from green to tan and be "corky" looking. Leave a short stem attached, as pumpkins do not store well without stems. The part of the fruit touching the soil will be cream to orange. Harvest before the first heavy freeze.



Use Storage Method 5. Cure pumpkins at 80 to 85°F and 80 to 95% relative humidity for 10 days before placing them into long-term storage. Pumpkins will keep well for 2 to 3 months, depending on the cultivar.

Nutrition note: 1/2 cup of cooked pumpkin contains approximately 25 calories and 1 gram of fiber and is an excellent source of vitamin A (26.5% DV). It contains smaller amounts of vitamin C (9.7% DV), calcium (2% DV), and iron (4% DV). Color = yellow/orange.

Radishes

Harvest just as soon as the roots reach an edible size. For a salad type radish, this is 1/2 to 1 inch in diameter. Radishes grow quickly, a factor that contributes to a mild flavor and crisp texture. If growth slows for any reason or if the radish becomes overmature, it will become spongy or woody and have a pungent, hot flavor.

Use Storage Method 1. Wash and cool radishes immediately. They will keep for 3 to 4 weeks.

Nutrition note: Radishes make a great low-calorie snack. 1/2 cup of sliced radishes contains 20 calories and 0 grams of fiber and is an excellent source of vitamin C (30% DV). Color = red.

Rhubarb

Do not harvest a rhubarb plant the year of planting, and limit the length of harvest the second year. Harvest the stalks from early spring to about June. Leaves are needed thereafter to provide food reserves for plant growth. Harvest by pulling the stalks, not by cutting. Remove the leaf blades and use only the fleshy stem. Leaves contain large amounts of oxalic acid and should not be eaten.

Use Storage Method 1. Rhubarb will store 2 to 4 weeks.

Nutrition note: 1 cup of diced raw rhubarb contains 26 calories and 2.2 grams of fiber and is a good source of vitamin C (16% DV). Color = red.

Rutabagas

Rutabagas will stand some frost but should be dug before the ground freezes. The root should be 3 to 5 inches in diameter to be mild flavored and tender. Rutabagas that are overmature or come from drought-stressed plants will be tough and woody. Harvest in late September or as needed for meals.

Use Storage Method 1. Rutabagas keep well under refrigeration, in an outdoor pit, or in an underground cellar. They will emit odors during storage. Storage is possible for 2 to 4 months.

Nutrition note: 1/2 cup cooked rutabagas contains 33 calories and 1.5 grams fiber and is an excellent source of vitamin C (27% DV). Color = yellow/orange.

Shallots

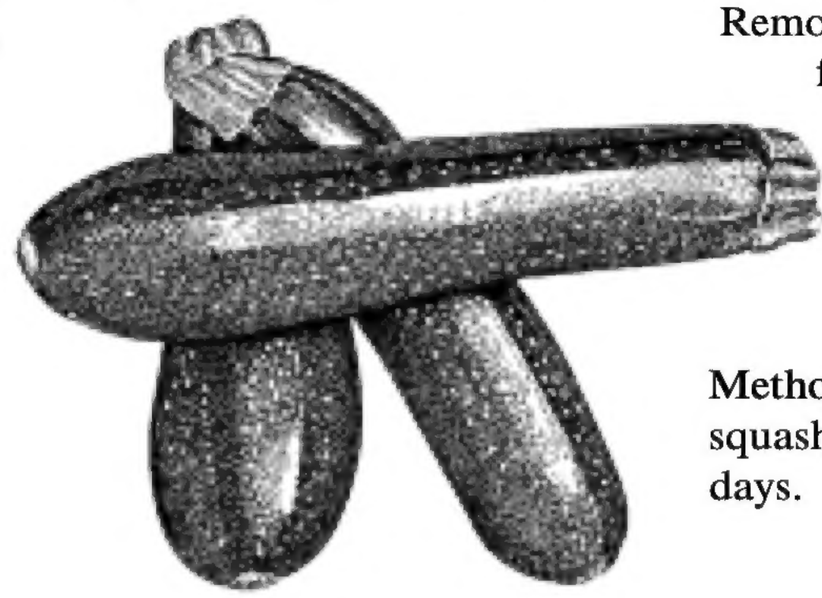
Shallot plants (tops and bulbs) can be eaten in the green stage. At maturity, the leaves begin to yellow and die down, and the bulbs reach their maximum size. Stop irrigating, as plants should mature in dry soil. Dig the shallot plants when the tops have died and lay them out of direct sunlight (to prevent sunburn) to dry and cure for 3 to 4 weeks leaving the tops attached. Before storing, cut or remove dried tops 1/2 to 1 inch above the bulb, remove any loose dirt, and trim the roots. Do not remove any of the protective, dry skin from the dried shallot.

Use Storage Method 3. Cure shallots during a warm, dry storage period of 2 to 3 months. After that, move shallots to long-term storage. Cured shallots will store for 1 to 8 months.

Nutrition note: 1/4 cup chopped raw shallots contains 29 calories and small amounts of vitamins A (9.5% DV) and C (5.3% DV). Color = white/tan/brown.

Squash: Summer

Harvest summer squash before the seeds enlarge and harden. Fruits will be small, tender, and sweet with a skin that can be punctured with a fingernail. Zucchini and other cylindrical summer squash should be 6 to 8 inches long when picked. Scallops should be 3 to 4 inches in diameter. Summer squash develop quickly, and daily or every-other-day harvest will catch fruit at the ripe stage.

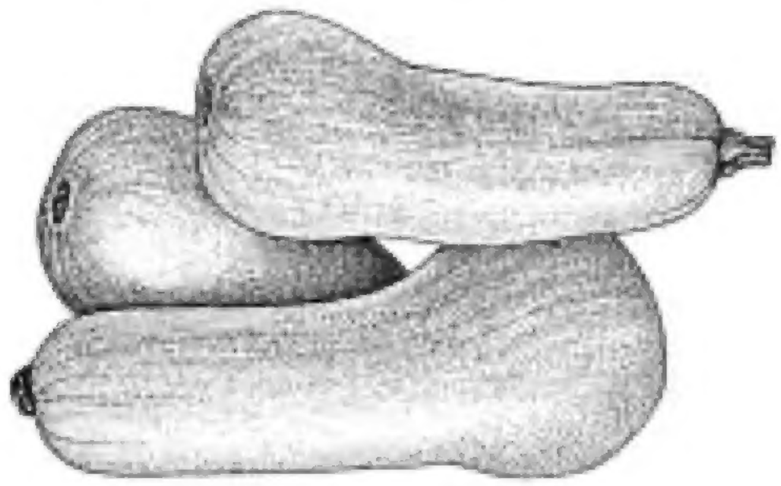


Remove all overmature fruit to encourage continued flowering and fruit production.

Use Storage Method 2. Summer squash keeps 5 to 14 days.

Nutrition note: 1/2 cup cooked summer squash, all varieties, contains 18 calories, 1.3 grams of fiber, and small amounts of vitamins C (8.25% DV) and A (4.2% DV), calcium (2.4% DV), and iron (1.8% DV). Color = yellow/orange.

Squash: Winter



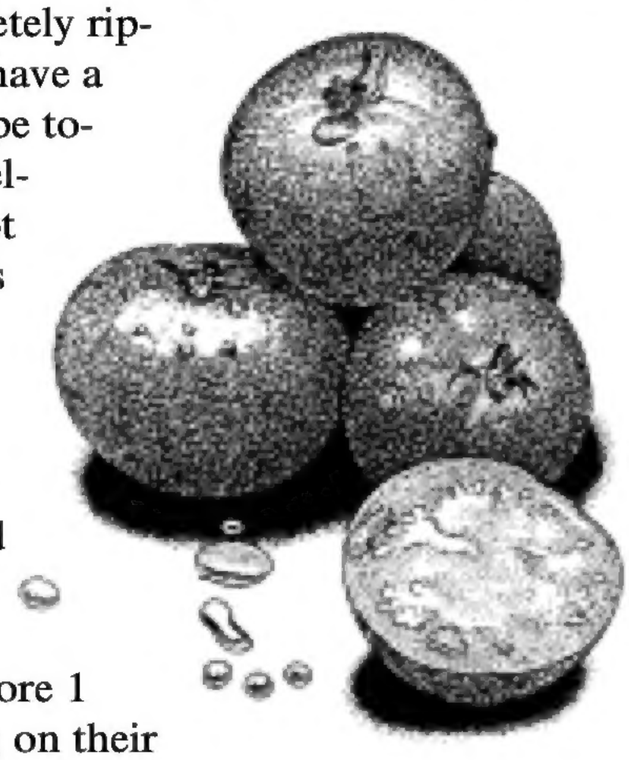
Allow winter squash to ripen fully on the vine. A squash ready to harvest will have a hard rind, which a fingernail will not pierce. The skin will lose its luster and appear dull. The stem will turn from green to tan and be "corky" looking. The bottom of the fruit touching soil will be cream to orange. Leave a short stem on the harvested fruit to prolong its storage life. Harvest before the first heavy freeze.

Use Storage Method 5. Cure winter squash at 80 to 85°F and 90 to 95% relative humidity for 10 days before placing them into long-term storage. Scatter the squash rather than storing them in a pile. Winter squash will store for 2 to 6 months. Do not cure acorn squash, as curing will toughen them. Use storage method 3 for acorn squash. They will keep only 1 to 2 months in storage.

Nutrition note: 1/2 cup cooked winter squash, all varieties, contains 40 calories and 2.9 grams of fiber. It is an excellent source of vitamin A (73% DV), a good source of vitamin C (16% DV), and a smaller source of folate (7% DV). Color = yellow/orange.

Tomatoes

Tomatoes can be harvested when the fruit is "mature green"—three-quarters ripe to just less than fully ripe. The cavities inside mature green fruit are filled with a thick, jelly-like material and the seeds have turned from white to tan. Tomatoes picked at mature green to less than fully ripe will continue to ripen and color after harvest. Tomatoes completely ripened on the vine will have a very rich flavor. All ripe tomatoes have well-developed seeds that are not sliced when the fruit is cut. At season's end, harvest mature green tomatoes before they are damaged by frost.



Use Storage Method 4 for mature green tomatoes. Mature green tomatoes will store 1 to 6 weeks, depending on their maturity when harvested. Move mature green tomatoes to 68 to 72°F as needed to ripen. Then store them as fully ripe tomatoes.

Use Storage Method 2 for fully ripe tomatoes. Fully ripe tomatoes will keep 4 to 10 days in storage.

Nutrition note: One medium, raw tomato contains about 25 calories and 1.4 grams of fiber and is an excellent source of vitamin C (39% DV) and a good source of vitamin A (15% DV). Color = red, yellow.

Turnips

Harvest in late September or as needed for meals. Turnips are mild and tender when they are medium-sized—no more than 2 to 3 inches in diameter. Turnips tolerate light frosts but should be dug before the ground freezes. Overmature turnips will be tough and woody. Turnip greens are good when leaves are 4 to 6 inches long.

Use Storage Method 1 for greens. Turnip greens will store for 10 to 14 days.

Use Storage Method 1 for roots. Turnips keep well under refrigeration, in an outdoor pit, or in an underground cellar. They will emit odors during storage. Turnips can be stored for 4 to 5 months.

Nutrition note: 1/2 cup cooked turnips contains 16 calories and 1.6 grams of fiber and is a good source of vitamin C (15% DV). Color = white/tan/brown.

About the Authors

Jo Ann Robbins is a University of Idaho Extension Educator in Jerome, Wm. Michael Colt is an Emeritus University of Idaho Extension Horticulturist, and Martha Raidl is Extension Food and Nutrition Specialist at the University of Idaho Boise Center.

Issued in furtherance of cooperative extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Charlotte V. Eberlein, Interim Director of Cooperative Extension System, University of Idaho, Moscow, Idaho 83844. The University of Idaho provides equal opportunity in education and employment on the basis of race, color, religion, national origin, age, gender, disability, or status as a Vietnam-era veteran, as required by state and federal laws.

Published July 1982; Revised July 2003
© 2003 University of Idaho All rights reserved
$3.00